

CLAIMS:

1. A device for operating a high-pressure discharge lamp, comprising:
a switched-mode power supply circuit for supplying power to the high-pressure discharge lamp from a supply voltage, the power supply circuit comprising at least one power switching element;
5 control means for controlling the at least one power switching element in its switched-on and switched-off states for controlling the power or current supplied to the high-pressure discharge lamp;
wherein the control means are adapted to control the power consumed by the lamp during its steady phase or the current consumed by the lamp during its run-up phase by controlling the
10 on-time (T_{on}) of the switched-on state of the at least one power switching element.
2. A device according to claim 1, wherein the value of the on-time (T_{on}) of the at least one power switching element is a preset value, the preset value depending on the specifications of the type of discharge lamp used.
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3. A device according to claim 1 or 2, wherein the on-time (T_{on}) of the at least one power switching element for a specific discharge lamp type is substantially constant.
4. A device according to any one of the preceding claims, comprising:
20 - input current determining means for determining the input current of the power supply, the input current determining means providing a signal representative of the determined input current;
- a feedback means through which said signal is fed back to the control means, wherein the control means are adapted to control the on-time (T_{on}) of the at least one
25 switching element as a function of said feedback signal.
5. A device according to any one of the preceding claims, comprising
- voltage determining means for determining the lamp voltage, the voltage determining means providing a signal representative of the determined lamp voltage,

- a feedback means through which said signal is fed back to the control means; wherein the control means are adapted to control the on-time (T_{on}) of the at least one power switching element as a function of said feedback signal.

5 6. A device according to any one of the preceding claims, comprising a dim level means for setting a reduced lamp power level, the dim level means providing a signal representative of the dim level of the lamp, wherein the control means are adapted to control the on-time (T_{on}) of the at least one power switching element as a function of said signal.

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7. A device according to claim 5 or 6, wherein the control means comprise a feedback controller for controlling the control means.

8. A device according to claim 7, wherein the control means are adapted to
15 provide fast lamp power adjustments and the feedback controller is adapted to provide relatively slow lamp power adjustments.

9. A device according to any one of claims 4-8, wherein the on-time (T_{on}) is iteratively adapted with a iteration frequency lower than the switching frequency of the
20 switched-mode power supply.

10. A device according to any one of the preceding claims, wherein the switching frequency of the switched-mode power supply is at least 100 kHz.

25 11. A device according to claim 9, wherein the iteration frequency is 100 Hz or less, preferably about 10 Hz or less.

12. A device according to any one of the preceding claims, wherein use is made of a half or full-bridge power supply and a filter circuit comprising a series inductor (L) and at
30 least one filter capacitor (C) parallel to the lamp.

13. A device according to any of the preceding claims, wherein the switched-mode power supply comprises a half-bridge or full-bridge commutating forward topology.

14. A device according to any one of the claims 1-13, wherein the switched-mode power supply comprises a down-converter

15. A method of operating a high-pressure discharge lamp, comprising:
5 supplying power to the high-pressure discharge lamp from a supply voltage, using at least one power switching element;

controlling the power consumed by the lamp during its steady phase using control means;

wherein said control means control the lamp power during the steady state of the lamp by
10 fixing the on-time (T_{on}) of the at least one power switching element.

16. A method according to claim 15, comprising presetting the value of the on-time (T_{on}) of the at least one power switching element depending on the specifications of the type of discharge lamp used.

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17. A method according to any one of the claims 15-16, wherein the on-time (T_{on}) of the at least one power switching element is kept substantially constant.

18. A method according to any one of the claims 15-17, comprising determining
20 the lamp voltage, providing a signal representative of the determined lamp voltage, feeding said signal back to the control means and adapting the on-time (T_{on}) of the at least one power switching element as a function of the determined lamp voltage.